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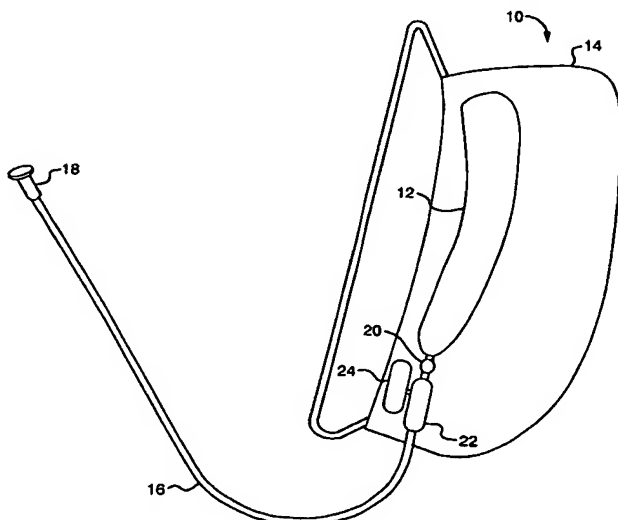
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(54) Title: UV LED BASED WATER PURIFICATION MODULE FOR INTERMITTANTLY OPERABLE FLOW-THROUGH HYDRATION SYSTEMS



(57) **Abstract:** A wearable or portable intermittently operable hydration system (10) includes a purification module (22) that contains one or more solid state UV devices that are positioned in the path of hydrating fluid, or water, flow through the hydration system to a mouthpiece (18) or other orifice. The purification module (22) provides a path for the fluid past one or more solid state UV devices, such as UV LEDs, that produce UV radiation in a germicidal range. When the fluid is flowing past the UV LEDs, the LEDs are turned on to provide sufficient UV radiation to purify the water. The UV LEDs are instant on devices with essentially no ramp-up required, and a sensor (20) or other signaling means in the flow path controls the turning on of the UV LEDs whenever the user initiates the fluid flow. The fluid flow path may run from a bladder (12) in a backpack (19) worn by the user, a sports bottle worn by or carried by the user or may be through a water filtration system that a user operates via a pump. The power for the purification module may come from batteries, solar cells, fuel cells, power converted from pumping or winding action or any combination thereof. Further, UV LEDs may be included in the walls of the container as additional

or alternative sources of UV radiation. The UV LEDs in the walls of the container may then be turned on when sufficient energy is available, as a precaution against, for example, a change in environmental conditions.